 <b>Nuclear Department Fleet Procedure</b>	FP-OP-ODM-01	Revision: 3
	Issue Date: 05/07/2010	
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Title: <b>Operational Decision-Making</b>		
Approval:  <b>Henry H. Butterworth</b> _____ Director, Operations Standards		

**INFORMATION USE**

- Procedure should be available, but not necessarily at the work location.
- Procedure may be performed from memory.
- User remains responsible for procedure adherence.

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## **1.0 PURPOSE**

- 1.1** This Administrative Procedure establishes requirements for evaluation of technical and operational decisions that affect plant operations, safety, reliability, and material condition. Considerations to be included in the decision making process are identified. This procedure is based on the INPO document "Principles for Effective Operational Decision-Making" and SOER 02-4, Rev. 1, "Reactor Pressure Vessel Head Degradation at Davis-Besse Nuclear Power Station".
- 1.2** This process is used by the plant management team and site departments when a Type 1 or Type 2 Operational Decision Making Issue (ODMI) has been identified. A Type 1 ODMI is an emergent plant condition that could potentially challenge plant safety, regulatory compliance, or continued full power operation that is not explicitly covered by other approved procedures. A Type 2 ODMI is a degraded plant condition (individual or aggregate) that could go "underground" and be manageable for awhile, but which could deteriorate further and force a unit into an undesired evolution such as an unexpected transient or unplanned plant shutdown.

## **2.0 APPLICABILITY**

- 2.1** This procedure applies to issues where a range of choices is available to respond to degraded equipment or plant conditions. Operability concerns SHALL be addressed in accordance with FP-OP-OL-01, "Operability / Functionality Determination" procedure before applying the Operational Decision-Making process.
- 2.2** For Type 2 Operational Decision Making Issues, this procedure addresses the principles and attributes that influence operational decisions. It is intended to provide organizations with a tool to assist in effective operational decision-making. The six principles integral to this process are detailed in Attachment 1. The high level principles are printed in boldface type and are followed by amplifying attributes to help clarify intent.
- 2.3** For Type 1 Operational Decision Making Issues, this procedure provides guidance for following a logical process for making decisions and determining the right course of action. It also includes criteria and guidelines to transition from Type1 to Type 2 decisions as appropriate.
- 2.4** This procedure does not apply to activities previously evaluated during the normal development process for the plant work schedule. However, scheduled activities which cannot be completed in accordance with the plant schedule and that result in long term operation in an abnormal configuration should be evaluated in accordance with this procedure.

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- 2.5** Entry into the Operational Decision Making process should be considered when there is an actual or potential reduction in operating or design margin.
- 2.6** Operational decision making is a "mind set" and method of consistently conducting day-to-day business in a way that assures not only that all aspects of a problem are identified and evaluated but also that the risk involved is assessed, the issue is promptly and completely communicated, the evaluation is in a format that is readily understood, and those issues which may ultimately impact short or long term operation of the facility are communicated to the Operations Department and the site in a format which answers all operational impact questions.
- 2.7** Operational Decision-Making issues may be identified initially through normal plant operation and inspections and require immediate evaluation. In these cases, the Shift Manager, Duty Station Manager or Plant Manager may direct immediate implementation of this process in parallel with the Action Request (AR) process (refer to FP-PA-ARP-01, "CAP Action Request Process").

### **3.0 RESPONSIBILITIES**

#### **3.1 Plant Manager**

1. Provides oversight over the Type 2 ODMI evaluation process.
2. Coordinating discussion of a Type 2 ODMI Evaluation with Site Vice Presidents and Plant Managers at other nuclear sites as well as appropriate Headquarters Management.
3. Approval (or delegation to a designee) of decisions recommended as a result of the Type 2 ODMI Evaluation process.

#### **3.2 Operations Shift Manager**

1. Identification of emergent plant issues that meet the entry conditions for a Type 1 Operational Decision Making Issue. This can be done by reviewing the merits of the issues to the "Operational Decision Making Issue Screening Checklist", QF-1138.
2. Once identified as a Type 1 ODMI entry conditions are satisfied, ensuring completion of QF-1137, "Type 1 Decision Making Evaluation" is complete.
3. Actuation of initial emergent plant issue meetings including notification and assembly of team members.

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4. Direct implementation of the Operational Decision-Making procedure in cases of conditions or equipment degradation requiring immediate assessment.
5. Inclusion of the QF-1137, "Type 1 Operational Decision Making Evaluation" in the associated CAP. Completed ODML documents should be attached to the CAP identifying the issue.
6. Approve the final decision from the Type 1 ODML.

### **3.3 Operations Manager or Duty Station Manager**

1. Provides oversight over the Type 1 ODML process.
2. Provides assistance and council to the Shift Manager when completing QF-1138, "Operation Decision Making Issue Screening Checklist", and QF-1137, "Type 1 Operational Decision Making Evaluation".
3. Determines when Type 1 ODMLs should be elevated to a Type 2 ODML.

### **3.4 AR Screening Team**

1. Identification of Operational Decision Making Issue via the AR process.
2. Designation of the ODML Evaluation Manager (a minimum of supervisor or above) with the Management level of the ODML Evaluation Manager commensurate with the significance of the issue being evaluated.
3. Identification and assignment of appropriate actions to track the development of the ODML issue:
  - a. ODM1 - Type 1 Operational Decision Making Issue
  - b. ODM2 - Type 2 Operational Decision Making Issue

### **3.5 Department Managers:**

1. Providing adequate resources to support analysis and resolution of Operational Decision Making Issues.

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### **3.6** Other Organizations, Groups, and Committees.

1. Evaluations under the ODMI process may be initiated by either on-site or off-site organizations, which are in a position to identify ODMI. Bringing the need for an ODMI evaluation to the attention of the AR Screening Team. Examples of organizations include but are not limited to:
  - All Plant Departments, in particular, Operations and Engineering
  - Plant Health Committee
  - Maintenance Rule Expert Panel
  - Plant Operations Review Committee (PORC)
  - Reactivity Management Review Board

### **3.7** Operational Decision-Making Issue Evaluation Manager

1. Coordinating all team activities necessary to complete a Type 2 ODMI evaluation.
2. Completion of QF-1113, "Type 2 - Operational Decision-Making Risk Matrix," and QF-1114, "Type 2 - Operational Decision-Making Issue Evaluation"
3. Identification of key stakeholders who represent internal departments as well as external groups such as the Asset Owner, NRC, INPO, contractors, suppliers, and equipment manufacturers.
4. Developing an implementation plan and associated contingency plans.
5. Setting trigger points for equipment performance or key system parameters that will require additional actions, e.g. take compensatory action, implement immediate repairs, form a team to study and recommend new actions, or perform additional monitoring. Trigger points assure that "predetermined" thresholds are established and communicated so that if the condition degrades, the next action is taken promptly rather than after more time-consuming discussion.
6. Obtaining appropriate reviews of the ODMI Evaluation Document.
7. Presentation of the ODMI Evaluation Document to senior management and obtaining final approval of an ODMI Evaluation Document.
8. Inclusion of the ODMI Evaluation Document in the associated CAP. Completed ODMI documents should be attached to the CAP or included as an AR for the CAP identifying the issue.

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9. Development and execution of a communication plan to inform site personnel of the decision and its basis.
10. Development and assignment of corrective actions resulting from an approved ODMI Evaluation.
11. Post Implementation review of the ODMI evaluation, assign an OTHA as needed to track the effectiveness of the decisions made to address the ODMI. These OTHA assignments should be made for all Type 2 Operational Decisions and elected Type 1 Operational Decisions. These reviews SHALL validate underlying assumptions, identify possible unintended consequences, and determine how to improve future decisions.

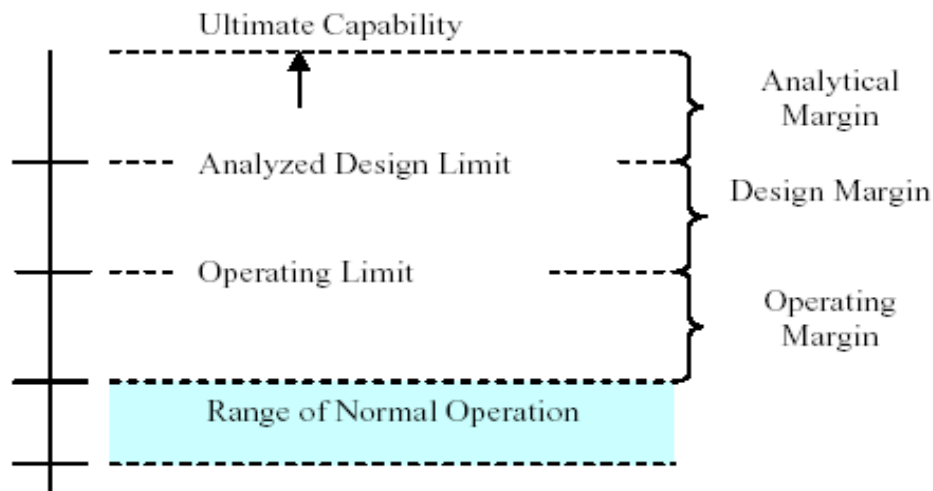
### **3.8 Operational Decision-Making Issue Team**

1. Completing QF-1114, "Type 2 - Operational Decision-Making Issue Evaluation" under the guidance of the ODMI Manager.
2. Developing implementation plans and associated contingency plans.
3. Development and collection of supporting information, data gathering and analyzing data in accordance with the defined schedule.
4. Supporting the ODMI Manager by completing the manager's responsibilities that are assigned to the team and its members.

## **4.0 DEFINITIONS**

- 4.1 Key Stake Holder** - Functional Area or Department Manager/Director (e.g., Operations, Engineering, Chemistry, Radiological Protection, Maintenance, and Scheduling) for key departments providing input into the decision or affected by the decision outcome. Also, the Asset Owner, NRC, INPO, suppliers, contractors and equipment manufacturers, as appropriate.

### MARGIN MODEL



**4.2 Margin Model** - Conservatism included in operational limits and the design of every system, structure and component in a nuclear plant. In quantitative terms, margin is the difference between the actual (or predicted) and required performance of a component, system, or structure. This conservatism may also be present in analyses for an entire safety function. Elements of the Margin Model are described below. When evaluating a plant issue for entry into the ODMI process, the reduction in margin should be considered.

1. For various parameters associated with a system or component, the **Ultimate Capability / Failure Limit** is a value at which the system or component will either fail or produce an undesirable effect.
2. The difference between the Analyzed Design Limit and the Ultimate Capability / Failure Limit is **Analytical Margin**. This is typically an unanalyzed region and comes from uncertainties in design, materials, fabrication, or conservative analysis assumptions and methodology. An exact value for this margin cannot be accurately determined in some cases.
3. For the same parameter, there is a minimum or maximum value at which the system or component is designed to operate, which is referred to as the **Design Margin**. The Operating Limit is usually found in operating procedures or operator aids. The Operating Limit may vary based on circumstances (i.e., the operating limit during normal operation may be different than the operating limit under emergency conditions). These variations are generally described and controlled by operating procedures.



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4. The **Analyzed Design limit** is normally found in or can be derived from a calculation. (In some cases a particular parameter may not be specifically covered by a calculation) The calculations, in turn, normally derive their acceptance criteria from the licensing basis. In other words, the Analyzed Design Limit is usually defined by whichever Code the Licensing Basis commits to. In some cases the Technical Specifications give the limit. It is usually defined by a governing code or may be set by a regulatory requirement.
5. The **Operating Limit** is the maximum or minimum operating value imposed on the operation of the system for any particular parameter. The limit is normally specified in facility configuration information (drawings, specifications, and databases) or included in technical specifications and is an input to the engineering analysis. Operating Limit may be different during normal and emergency plant operations.
6. **Operating Margin** is the difference between the normal operating point of a system and the operating limit of the system. The operations department maintains a normal band of operation. What remains is the Operating Margin. Degraded equipment, plant modifications or analytical creep can reduce the operating margin. Administrative controls used to maintain margin may limit the **Range of Normal Operation**.

**4.3 ODMI Evaluation Manager** - A member of the management team assigned overall responsibility for performing an ODMI evaluation. The ODMI Evaluation Manager is accountable for obtaining information, communicating with Key Stakeholders, identifying alternatives and other attributes required to make the decision and identify the impacts of its outcome. Functions as the team leader who coordinates input from the various Key Stake Holders and Team Members.

**4.4 Operational Decision-Making** - The processes and attributes employed by the Plant Management Team to ensure proper response to degraded conditions (e.g. reduction of safety margin, increased primary system and containment leakage that remains below operational or license limits, problems with plant equipment that may cause an unplanned power reduction or plant shutdown, fuel defects, and the aggregate of equipment or material deficiencies). Response actions may occur over a period of days or weeks, with the intent of effectively resolving the issue in a safe, organized, efficient and thorough manner. These decisions are not the sole domain of the Operations Department and, in fact, are typically performed by personnel from other departments such as Engineering, Chemistry, Radiation Protection, Maintenance, Scheduling, etc. Although managers and supervisors normally make such decisions, it is imperative that personnel at all levels in the organization actively participate in this process.

- 4.5 Type 1 Operational Decision-Making Issue (ODMI)** – an emergent plant condition that could potentially challenge nuclear safety, personnel safety, regulatory compliance, or continued full power operation that is not explicitly covered by other approved procedures. Type 1 ODMIs are issues of lower significance or complexities and are typically performed by the Shift Manager with a moderate level of support. WHEN more complex or more extensive problems are encountered, THEN the Type 2 ODMI process will be used. Type 1 Operational Decision Making Issues may also be identified following completion of an Operability Determination or Functionality Evaluation per FP-OP-OL-01 to assist in determining the best path for resolution of a degraded or non-conforming condition.
- 4.6 Type 2 Operational Decision-Making Issue (ODMI)** – An operational issue that has been determined to fall below those action thresholds defined in plant licensing documents and/or does not have actions clearly defined in Plant administrative or operating procedures. Typically, these issues are captured in level “B” or higher Action Requests (AR). These issues may be the result of chronic degradation over a long period of time, which when allowed to exist in aggregate, could significantly increase the potential for a nuclear safety issue, unplanned power reduction or unexpected transient if left without resolution

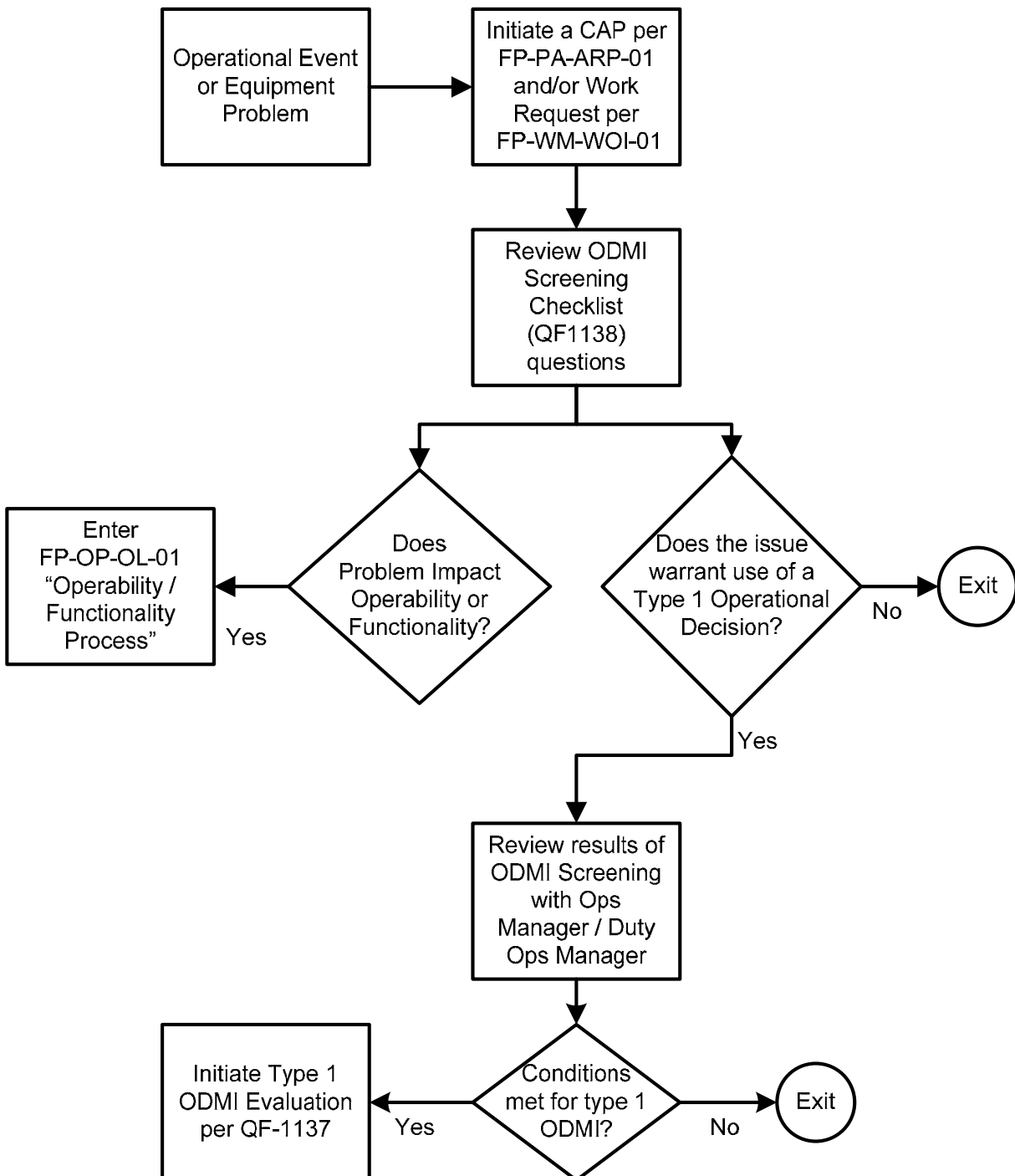
## 5.0 REQUIREMENTS

- 5.1** The following flowchart presents the entry pathways into the Operational Decision Making Process.
1. The first step is to ensure a CAP or WR is initiated for the issue. This will ensure the issue is reviewed by the CAP Screening Team for Type 2 ODMI identification and the issue is included in the Work Management process for initiation of equipment repair.
  2. The second step is to conduct a preliminary review of the questions listed on QF-1138 to determine if additional help is needed in decision making. This review should be done by the Shift Manager or designee.
  3. A critical step in the preliminary assessment is to determine if the equipment or system impacted by the issue is within the scope of the operability / functionality process. IF it is, THEN process the issue through the Operability / Functionality Process per FP-OP-OL-01. Use of this process may result in full resolution of the issue or create a clear path to resolution of the issue, however IF additional help is needed in resolving the issue, THEN use the ODMI screening process in parallel to determine if the ODMI process should be used

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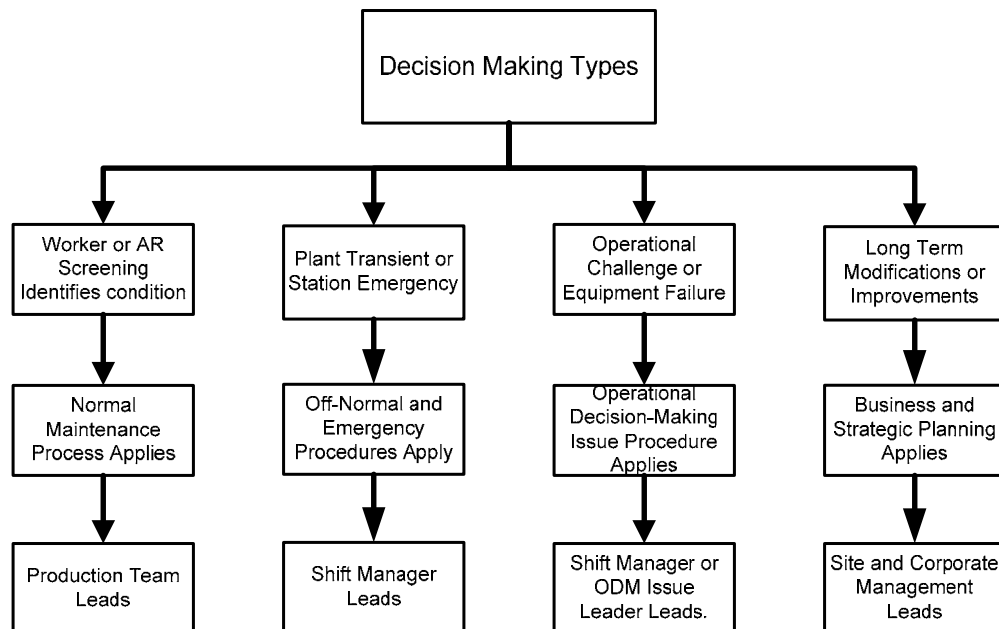
4. Review the ODMI screening criteria per QF-1138 with the assistance of the Operations Manager or Duty Operations Manager. This can be an informal review of the checklist items that cause concern. IF the issue warrants additional support to identify the best solutions, THEN implement the Type 1 ODMI evaluation per QF-1137. The Operations Manager or Duty Operations Manager may also recommend use of the Type 2 ODMI evaluation process per QF-1114 as appropriate.

ODMI Decision Making Flowchart



**5.2** The diagram below illustrates four separate operational and technical decision making pathways.

1. The first path involves the identification, screening, prioritizing, and working normal corrective and elective work items. For these conditions, the normal work management processes should be used to prioritize and schedule the work.
2. The second path involves the immediate control room and station response to unplanned transients and emergency conditions. For these conditions, the Shift Manager makes immediate decisions in accordance with plant operating procedures.
3. The third path involves Site Management making decisions in response to degraded conditions that fall below action thresholds defined in license documents or that are not clearly defined by existing procedures. For these conditions, the Operational Decision Making process should be considered.
4. The fourth path includes long range strategic and business decisions that are made by higher levels of management. For these conditions, a systematic approach is used to determine the merits of the decision.



**Tools:**

- 1) Nuclear Department Fleet Procedure FP-PA-ARP-01, "CAP Action Request Process"
- 2) Nuclear Department Fleet Procedure FP-WM-WOI-01, "Work Identification, Validation, Screening, and Cancellation"
- 3) Nuclear Department Fleet Procedure FP-E-TS-01, "Troubleshooting Process"
- 4) Nuclear Department Fleet Procedure FP-OP-FER-01, "Event Response Procedure"
- 5) Nuclear Department Fleet Procedure FP-OP-DSM-01, "Duty Station Manager"
- 6) Nuclear Department Fleet Policy CP-0075, "Fleet Forced Outage"

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### 5.3 GENERAL REQUIREMENTS FOR TYPE 1 OPERATIONAL DECISIONS

- 5.3.1 There are two general conditions that trigger entry into this procedure. The first is when a problem or question occurs on the ability of Structures, Systems, or Components (SSC) to perform their specified function or the reliability of generation critical equipment is questionable. The second occurs when a human performance related event occurs that requires a carefully orchestrated approach to affect recovery or manage the consequences of the resultant event. It is the responsibility of the Shift Manager to assess plant conditions and orchestrate the initial response.
- 5.3.2 In all cases the Corrective Action Program is the overall controlling process and is performed concurrently with either the Operability / Functionality Determination Process or the Operational Decision Making Process. Generally the Type 1 decision making checklist will be completed prior to entering the Type 2 decision making procedure but at the discretion of the Plant Manager, the Type 2 decision making checklist may be entered at any time.

### 5.4 SPECIFIC REQUIREMENTS FOR THE TYPE 1 ODMI PROCESS

The following steps describe how to complete QF- 1138 “Operational Decision Making Screening Checklist”. The plant should be in a stable condition prior to considering entry into the ODMI process.

- 5.4.1 This checklist is designed to aid on-shift personnel in responding to emergent plant issues by following a logical process for making decisions and determining the right course of action. The threshold for applying the checklist can be for minor issues up to significant issues entered at the discretion of the Shift Manager. For events of greater consequence it is required to engage additional levels of management to aid in the decision making process. Consult with the Operations Manager or Duty Station Manager for guidance as necessary.
- 5.4.2 IF an issue is identified that could benefit from an Operational Decision, THEN the Shift Manager should use QF-1138 “Operational Decision Making Screening Checklist” to determine if entry into the ODMI process is needed. The Shift Manager should consult the Operations Manager or Duty Operations Manager with that decision.
- 5.4.3 Once the decision has been made to enter the ODM process, then the Shift Manager should complete QF-1137 “Type 1 – Operational Decision Making Evaluation”. At the direction of the Operations Manager the response to the event can be upgraded to a Type 2 decision. In that case the Type 1 ODM evaluation can be exited at the direction of the Operations Manager or Duty Station Manager and the applicable sections of this procedure should be applied for a Type 2 ODMI.

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5.4.4 The determination when or if to notify senior management is made by the Shift Manager and is based on the urgency of informing management and obtaining additional resources. QF-1137 contains a table of individuals to consider. Generally for off-normal working hours senior management involvement will be by phone. This evaluation is the script that should be used when making the call or conducting a meeting. Consult with the Operations Manager or Duty Station Manager for guidance and to determine call participants. Complete as much of this evaluation as is reasonable prior to initiating the call or briefing management

5.4.5 The following sections align with sections of QF-1137 and provide additional clarification of how to fill out the evaluation:

1. Section A – Identify the problem that a decision is needed for. It is desired to keep the threshold low for use of the evaluation since often seemingly simple problems can evolve into more complex ones. Identify any immediate or compensatory actions taken to mitigate the problem and assess the impacts of the problem.
2. Section B – Define the impact on margin by describing where current operating parameters are in regard to the normal range of operations, operating limits, or design limits. Describe the impact reduced margin has on long term operation.
3. Section C – Define the decision that needs to be made. Why does this issue require use of the ODM process? Are their time limitations or other circumstances that cause this decision to use the ODM process?
4. Section D – Identify the options available to you and the attendant pros and cons for each. This will help with the decision making process by clarifying what is at stake for each choice. In all cases, the principles outlined in attachment 1 “Principles for Effective Operational Decision-Making” SHALL be used as a guide in selecting the final course of action. It is expected that personnel are systematic and rigorous in making decisions and that safe operation is always the driving goal. Consideration should be given to assigning a “devil’s advocate” for a thorough discussion of the cons.
5. Section E – Identify individuals and organizations that input was obtained from and attach any documents provided. The input can be related to the problem at hand or to gain further insights on the options to be considered.
6. Section F – Identify the decision made (should be one of the options considered). Important in making the final decision is to fully understand the assumptions that underpin the decision. It is important to critically challenge the assumptions, investigate anomalies, and consider potential adverse consequences of planned actions to assure that decisions are not being made on false information or popular beliefs that everyone assumes is true but may not be. Consideration should be given to what could go wrong if an assumption is incorrect.

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7. Section G – Identify the risk considerations for the decision made. This is intended as a qualitative summary of how the decision chosen impacts safety risk. Consider the impacts on the five critical nuclear safety functions, personnel safety, and generation risk when developing the summary. Compliance with license requirements generally identifies acceptable safety risk but may not reflect the prudent choice. Consider:
  - a. impacts on margin and aggregate impacts when assessing risk
  - b. is there a zero risk option
  - c. has the decision been proven safe or has it just not been proven unsafe.
8. Section H – Identify any plant limitations imposed as the result of the decision chosen. This may include restrictions on power level, removing other equipment from service, protecting redundant trains, additional monitoring, manual actions in place of automatic actions, temporary procedure changes, temporary modifications, etc
9. Section I – Identify any additional actions required as the result of the decision chosen. Identify if the actions are required to be completed prior to implementing the decision chosen (prerequisites). Identify the action party or organization responsible to complete the action.
10. Section J – Identify any notifications made to external individuals or agencies. If notifications are made in accordance with another procedure it is not required to duplicate the documentation of the notifications here, however the procedure under which the notifications were documented should be noted in this section.
11. Section K – Identify if an independent review (PORC) of this decision is required. The decision to have an independent review can be made by the Shift Manager. The Operations Manager or Duty Station Manager should review this determination and initiate a PORC review if in their judgment it is required. An independent review need not be completed before the decision is implemented unless the Shift Manager specifically requests it.
12. After completing the evaluation, attach the completed evaluation to the CAP AR tracking the overall issue, complete the ODM1 AR assignment and assign an action to the Operations Manager to complete a review of the completed evaluation.



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## **5.5 GENERAL REQUIREMENTS FOR TYPE 2 OPERATIONAL DECISIONS**

- 5.5.1 The Type 2 Operational Decision includes degraded conditions that may involve reductions of safety margins which can occur over a period of days or weeks. Industry examples include increased primary system and containment leakage that remains below operational or license limits, problems with plant equipment that may cause an unplanned power reduction or plant shutdown, fuel defects, and the aggregate of equipment or material deficiencies.
- 5.5.2 Sound Operational decisions often send a strong message to the plant staff and have lasting effects on future decisions. Focusing management attention on the specific demands associated with effective operational decision-making can help plants avoid significant events.

## **5.6 TYPE 2 DECISION MAKING PROCESS**

- 5.6.1 Type 2 Operational Decision Making Issues are typically identified by the Shift Manager, AR Screen Team or other members of management.
- 5.6.2 Identify the ODMI Evaluation Manager responsible for development of the ODMI evaluation.
- 5.6.3 ODMI Evaluation Manager assembles the multidisciplinary team (as required based on complexity of the issue) that will be involved in development of the ODMI evaluation.
- 5.6.4 ODMI Evaluation Manager establishes priorities for completion of supporting information and data gathering, allocates resources, and establishes time frames to assemble and analyze data commensurate with the defined schedule.
- 5.6.5 During initial assembly, the ODMI Evaluation Manager should ensure all team members are familiar with the principles presented in Attachment 1.
- 5.6.6 Initiate QF-1114, "Type 2 – Operational Decision-Making Issue Evaluation." The ODMI Evaluation should include:
- Team membership including the ODMI Issue Manager and assigned team members,
  - Assignment of a "devil's advocate" to challenge assumptions, anomalies, and potential adverse consequences of planned actions.
  - Scope/Purpose of Plan including a description of the Operational Decision that needs to be made,

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- Identification of Consequences/Details on Solution Evaluation,
- Relevant Operating Experience,
- Specific Actions/Procedures used/Owners/Due dates,
- Compensatory Measures required,
- Contingencies based on Consideration of Potential Events/Failures,
- Trigger Point(s), Abort and Hold Criteria and Actions if Trigger Point(s) are exceeded,
- Any New/Revised Procedures Needed,
- Any Ops/Staff Preparation Required such as Just-in-Time Training,
- Communications Plan to key stakeholders,
- Monitoring Activities needed to ensure solutions are effective.

5.6.7 Collect appropriate information and consult with subject matter experts as necessary to obtain input to the decision-making process.

5.6.8 Evaluate/Analyze information collected. QF-1113, "Type 2 – Operational Decision-Making Risk Matrix," should be completed to assist in evaluating the risks associated with various decision options. The results of the Risk Matrix are intended as a guide to assist in decision making and are not binding in evaluating options. The judgment of station personnel may indicate that a higher risk option should be implemented based on factors not covered in the risk assessment process. In those cases the Risk Matrix insights should be used in defining Contingency Plans and/or compensatory measures to minimize the potential occurrence or consequences of the course of action taken.

5.6.9 Consider if the decision will result in one or more of the following:

1. First time industry or site evolution.
2. Significant change in an existing process.
3. Making the plant an industry outlier.
4. Degradation of equipment.
5. Introduction of personnel safety risks.

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6. Analysis being used to accept significant material degradation.
7. Contingency actions that require additional manpower.
8. Changes in plant response to either transients or normal evolutions.
9. Extended operation in a condition that could challenge operator control or performance such as operation at low power.

5.6.10 Consider the aggregate impact of the decision

1. Give broad consideration to other factors and conditions that could adversely affect risk, such as increased likelihood for human error or the impact of multiple equipment problems.
2. Staff capabilities to implement alternatives and associated contingencies.

5.6.11 Evaluate the pros/cons and costs associated with the decision; consider Nuclear Safety, personnel safety, dose, risk reduction, asset management, plant reliability, etc.

5.6.12 Document inputs and assumptions used in the decision analysis along with other appropriate information applicable to the decision-making process on QF-1114, "Type 2 – Operational Decision-Making Issue Evaluation."

5.6.13 After completing the evaluation, ODMI Manager attaches the completed evaluation to the CAP AR tracking the overall issue, complete the ODM 2 AR assignment and assign an action to the Plant Manager to complete approval of the evaluation

5.6.14 Present recommendations to senior management and obtain approval of the ODMI Evaluation.

5.6.15 Communicate the decision and the basis for it to site personnel as deemed appropriate by the management team. The communication plan should consider including an article in the site's next available *Team Notes* once the decision has been made. ODMIs with great significance may need a more detailed communications plan to include discussion at leadership meetings as well as determining key stakeholders beyond site personnel who need to be informed of the decision and its basis

5.6.16 Attach the approved ODMI Evaluation to the CAP AR associated with the ODMI.

5.6.17 Determine the need for Post Implementation Review and assign its performance as an OTHA to the AR.

## 5.7 POST IMPLEMENTATION REVIEWS FOR ODMI EVALUATIONS

<b>NOTE:</b>	The purpose of reviewing decisions made using this procedure is to ensure lessons learned from operational decision-making are identified and shared.
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- 5.7.1 When required, the Post Implementation Review for a particular ODMI should be scheduled and assigned by including the Post Implementation Review in the corrective action plan for the associated AR as an OTHA assignment type. These OTHA assignments should be made for all Type 2 Operational Decisions and selected Type 1 Operational Decisions.
- 5.7.2 The Post Implementation Review should be performed under the direction of a Department Manager who is independent of development of the ODMI being reviewed.
- 5.7.3 The Post Implementation Review should be performed in a timely manner to ensure information is current and accurate.
- 5.7.4 The Post Implementation Review compares actual performance to management expectations, standards of excellence, and operating experience.
- 5.7.5 The review should consider issues such as:
  - 1. Does the decision still appear to be the right decision and what evidence is there that the decision was the right or wrong decision?
  - 2. Was the decision effective in resolution of the issue?
  - 3. Was there any part of the decision process that is now known as being missed or flawed?
  - 4. Were the assumptions made correct?
  - 5. Were there any unintended consequences from the action taken?
  - 6. What lessons were learned in the decision making process, and how will they be incorporated into development of future ODMI evaluations?
- 5.7.6 Positive examples of decision-making are celebrated, and desired behaviors are reinforced and publicized.
- 5.7.7 Formal decision-making models are considered for repetitive situations to enhance the likelihood of future success.

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5.7.8 Case studies or other learning methods based on the evaluations are used for training and development.

5.7.9 Managers coach individuals to achieve needed improvements.

## **6.0 RECORDS**

None

## **7.0 REFERENCES**

### **7.1 SOURCE DOCUMENTS**

1. INPO Principles for Effective Decision Making – December 2001

### **7.2 REFERENCE DOCUMENTS**

1. INPO Principles for Effective Decision Making – December 2001
2. FP-OP-OL-01, "Operability /Functionality Determination"
3. FP-PA-ARP-01, "CAP Action Request Process"
4. QF-1113, "Type 2 Operational Decision-Making Risk Matrix"
5. QF-1114, "Type 2 Operational Decision-Making Issue Evaluation"
6. QF-1137, "Type 1 Operational Decision Making Evaluation"
7. QF-1138, "Operational Decision Making Screening Checklist"
8. FP-E-TS-01, "Troubleshooting Process"
9. FP-OP-FER-01, "Event Response Procedure"
10. FP-OP-DSM-01, "Duty Station Manager"
11. FP-E-CM-01, "Margin Management"
12. CP-0075, "Fleet Forced Outage"

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### **7.3 COMMITMENTS**

None

### **8.0 REVISION SUMMARY**

Changes made to sections 3.4.4; 3.7.11; 5.6.17 and 5.7.1 to remove the requirement for an EFR for ODMIs. A review will still be done as an OTHA to the CAP initiated to track the ODMI. The responsibility for the initiation of the OTHA will be with the Owed To for the CAP (reference the new step 3.7.11).

### **9.0 ATTACHMENTS**

#### **9.1 Attachment 1, "Principles for Effective Operational Decision-Making"**

**ATTACHMENT 1**  
**PRINCIPLES FOR EFFECTIVE OPERATIONAL DECISION-MAKING**

**A. Conditions that potentially challenge safe, reliable operation are recognized and promptly reported for resolution**

**1. Successful Outcome**

Personnel at all levels recognize and are intolerant of conditions and behaviors that challenge or reduce margins of plant safety or reliability. These conditions, along with suggested solutions, are brought to management's attention in a timely manner. Supervisors and managers take actions to resolve problems and provide feedback to personnel.

**2. Attributes \***

- Personnel recognize potentially degraded conditions through the following:
  - Knowledge and understanding of safety expectations, including design and licensing bases
  - Awareness of proper equipment or system operation and trends
  - A questioning attitude
  - Persistence in identifying problems and suggesting solutions
- Expectations are clearly defined for the following:
  - understanding the threshold of problem reporting
  - identifying and communicating problems
  - evaluating degraded conditions for significance and involving higher levels of management
  - considering the aggregate effect of problems
- Managers and supervisors are tasked with the following:
  - giving priority to conditions that impact the safe, reliable operation of the station
  - applying the appropriate operational perspective to problems by considering operating conditions, operating experience, license and design basis, and operational and engineering judgment
  - taking deliberate action and providing feedback on the disposition of identified problems
  - reinforcing expectations for communicating and escalating issues, as well as recognizing personnel for doing so

\*Programs that support the development of these characteristics are more fully outlined in *Principles for Effective Self-Assessment and Corrective Actions Programs*, December 1999.

**ATTACHMENT 1 (CONTINUED)**  
**PRINCIPLES FOR EFFECTIVE OPERATIONAL DECISION-MAKING**

**B. Roles and responsibilities are established for making and implementing decisions and are thoroughly understood by plant personnel.**

1. Successful Outcome

Station personnel understand their specific responsibilities with respect to the decision-making process. Single-point accountability is maintained for the actual decision, allowing for direct and timely feedback from all involved personnel when conditions change.

2. Attributes

- Manager and staff roles and responsibilities are clearly understood and include the following:
  - single-point accountability for decision-making
  - Assembly and direction of multidiscipline investigation team(s) with designated lead(s)
  - Managers' scope of involvement
  - Identification of appropriate key stakeholders who represent internal departments as well as external groups such as vendors, suppliers, and architect engineers
  - Effective and timely communication with key stakeholders
  - Resource and schedule commitments
  - Implementation and contingency planning
  - Independent oversight group activities
- Involved personnel accept responsibility for the following:
  - understanding the entire plan, as well as contingencies and expected outcomes
  - recognizing and reporting unexpected results for timely resolution
  - transferring assigned responsibilities to other capable personnel during absences, including appropriate communication to the organization
- Involved personnel understand their roles and responsibilities through the following:
  - clear communication of details to key stakeholders
  - Management verification of clear understanding through the use of direct communications



**ATTACHMENT 1 (CONTINUED)**  
**PRINCIPLES FOR EFFECTIVE OPERATIONAL DECISION-MAKING**

**C. Potential consequences of operational challenges are clearly defined, and alternative solutions are rigorously evaluated.**

**1. Successful Outcome**

The scope of the condition is clearly defined, operational significance is determined, and alternatives are developed that provide the best technical solutions considering potential consequences such as operational challenges, license compliance, and effect on safety margins. Implementation risks are understood for each alternative.

**2. Attributes**

- A multidiscipline team approach is used that includes the following:
  - investigates emergent or changing conditions
  - engages diverse and specialized expertise from inside and outside the organization as dictated by conditions
  - establishes priorities and allocates resources to optimize group effectiveness
  - establishes time frames to assemble and analyze data commensurate with the situation's importance, complexity, and urgency
  - Objectively considers all input
  - Freely challenges assumptions, facts, and conclusions
  - Openly discusses various solution alternatives
  - uses management oversight to ensure appropriate depth and focus
- The condition and consequences are systematically evaluated to accomplish the following:
  - gain team agreement regarding a clear definition of the problem, causes, and consequences
  - gather the appropriate validated information from diverse sources, including key stakeholders, to ensure consideration of operational effects, nuclear safety margin, personnel safety, and business aspects
  - define the full scope of degraded conditions
  - establish the timeliness of needed solutions

**ATTACHMENT 1 (CONTINUED)**  
**PRINCIPLES FOR EFFECTIVE OPERATIONAL DECISION-MAKING**

- Identify alternatives and solutions that consider the following:
  - use risk evaluation and problem analysis tools effectively in the consideration of the various options
  - ensure the associated risks and consequences are fully defined for each of the recommended solutions and their implementation
  - characterize the operational impact of solutions by rigorously applying and considering existing operating conditions, operating experience, probabilistic safety assessment (PSA), licensing and design bases, and operational and engineering judgment
  - capture, validate, and document critical assumptions for future reference

**D. Decisions are based on a full understanding of short- and long-term risks and the aggregate impact of conditions associated with various options.**

1. Successful Outcome

A course of action is selected based on a critical consideration of risks and potential consequences and a thorough understanding of alternate solutions. The final decision is a deliberate act, providing clear direction, contingencies, and abort criteria.

2. Attributes

- Understand and consider risk, including the following:
  - conducting a broad review of the likelihood and the consequence of a wide range of undesirable results such as reduced reactor safety or personnel safety, equipment damage, or lost power production
  - ensuring that plant operations will remain deliberate and well controlled
  - conducting a critical review of technical risk bases, such as PSA, as needed
  - recognizing personnel capabilities and readiness to implement solutions
  - maintaining the public trust

**ATTACHMENT 1 (CONTINUED)**  
**PRINCIPLES FOR EFFECTIVE OPERATIONAL DECISION-MAKING**

- Understand and consider the aggregate impact of the various options for the given operating condition, including the following:
  - giving broad consideration to other factors and conditions that could adversely affect risk, such as an increased likelihood for human error or the aggregate impact of many minor equipment problems
  - maintaining or improving safety margins while appropriately considering business variables of production and cost
  - having staff capable of implementing alternatives and associated contingencies
  - understanding potential unintentional consequences of the decision on station culture
- Consider using various methods to validate solutions, such as the use of independent checks and reviews.

**E. Implementation plans are developed to effectively communicate actions, responsibilities, compensatory measures, and contingencies to ensure successful outcomes.**

**1. Successful Outcome**

An implementation plan is in place that includes expected actions, roles and responsibilities, compensatory measures, and contingencies for all reasonable outcomes. All involved personnel have a thorough understanding of the plan and the decision bases. During implementation, any changes in conditions are quickly recognized and communicated to decision-makers.

**2. Attributes**

- Implementation plans include the following, as appropriate:
  - schedules and guidance to support implementation
  - Clearly identified roles and responsibilities
  - Compensatory measures, as required
  - Contingencies that are based on the consideration of potential events and failures
  - abort and hold criteria
  - New or revised procedures, as needed, to support changes in plant operations, limitations, policies, or responsibilities
  - Preparation, such as training and use of mockups, to ensure that people can complete activities and contingencies with available resources, procedures, and conditions

**ATTACHMENT 1 (CONTINUED)**  
**PRINCIPLES FOR EFFECTIVE OPERATIONAL DECISION-MAKING**

- Communication aspects of the plan include the following:
  - appropriate avenues to reach all affected personnel
  - Bases for the decision, expected outcomes, potential downsides, planned contingencies, reasons for changes, and abort criteria
  - Messages at the appropriate level of detail for the station staff, oversight organizations, and the public, as needed
  - solicited feedback to ensure common understanding of the plan
- Implementation of the plan includes the following:
  - Management involvement and follow-up to ensure actions are carried out as planned
  - Use of increased monitoring measures throughout the implementation process to validate assumptions and conditions and verify expected results are achieved
  - Reassessment of solutions as new information or changing conditions are identified
  - review, approval, and communication of plan changes to the same level as the original

**F. Decisions and decision-making activities are periodically evaluated.**

**1. Successful Outcome**

Lessons from operational decision-making are identified, shared, and reinforced with managers and station personnel. Decision-makers continuously improve their decision-making effectiveness through implementation of a systematic, well-defined approach for collecting and analyzing feedback to enable them to learn from previous decisions.

**2. Attributes**

- Senior managers identify and evaluate decisions that relate to problems or events that provide the best learning opportunities.
- Evaluation includes participation by or input from members involved in the decision-making process.
- Senior managers consider the use of independent personnel to conduct evaluations.
- Evaluations are timely to ensure information is current and accurate.
- Effectiveness reviews compare actual performance to management expectations, high industry standards, and operating experience.

**ATTACHMENT 1 (CONTINUED)****PRINCIPLES FOR EFFECTIVE OPERATIONAL DECISION-MAKING**

- Lessons learned from decision-making activities are used to improve the decision-making process.
- Positive examples of decision-making are celebrated, and desired behaviors are reinforced and publicized.
- Formal decision-making models are considered for repetitive situations to enhance the likelihood of future success.
- Case studies or other learning methods based on the evaluations are used for training and development.
- Managers coach individuals to achieve needed improvements.